



The Role of Waste-to Energy in Sustainable Material Management

Presented by:

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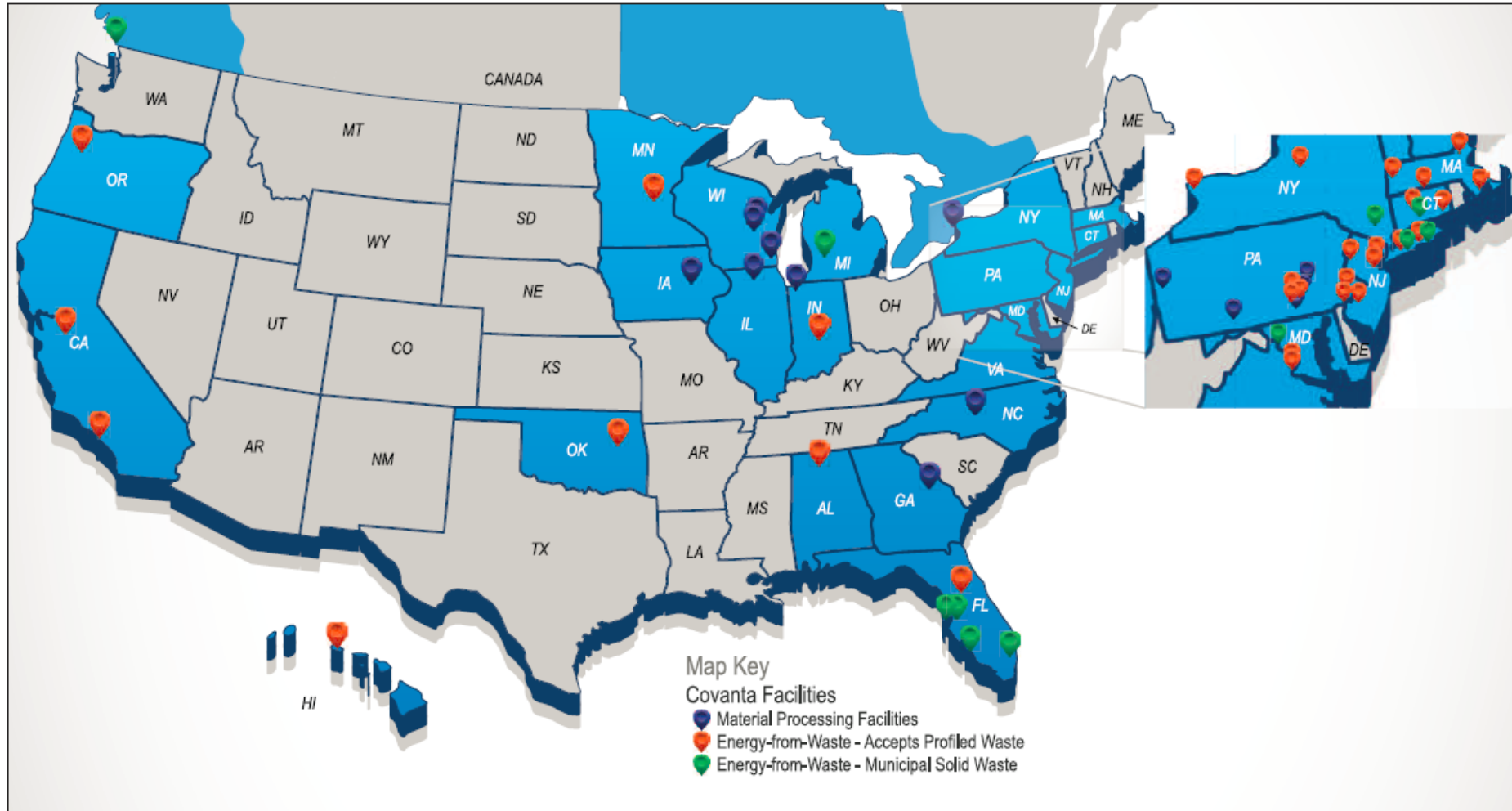


Powering Today Protecting Tomorrow

World Leader in providing municipalities and corporate customers
with sustainable waste and energy solutions

Service and Operational Coverage

- Covanta has 70% of the country's Energy from waste capacity



2015 Energy-from-Waste Metrics ⁽¹⁾



• MSW Processed	19,398,685 tons
• Steam Produced	115,331,665 klbs
• Electricity Generated	10,277,383 mwh
• Ferrous Recovered	427,000 tons
• Non-Fe Recovered	35,186 tons



(1) Aggregate for all Covanta EfW facilities operating in No. America

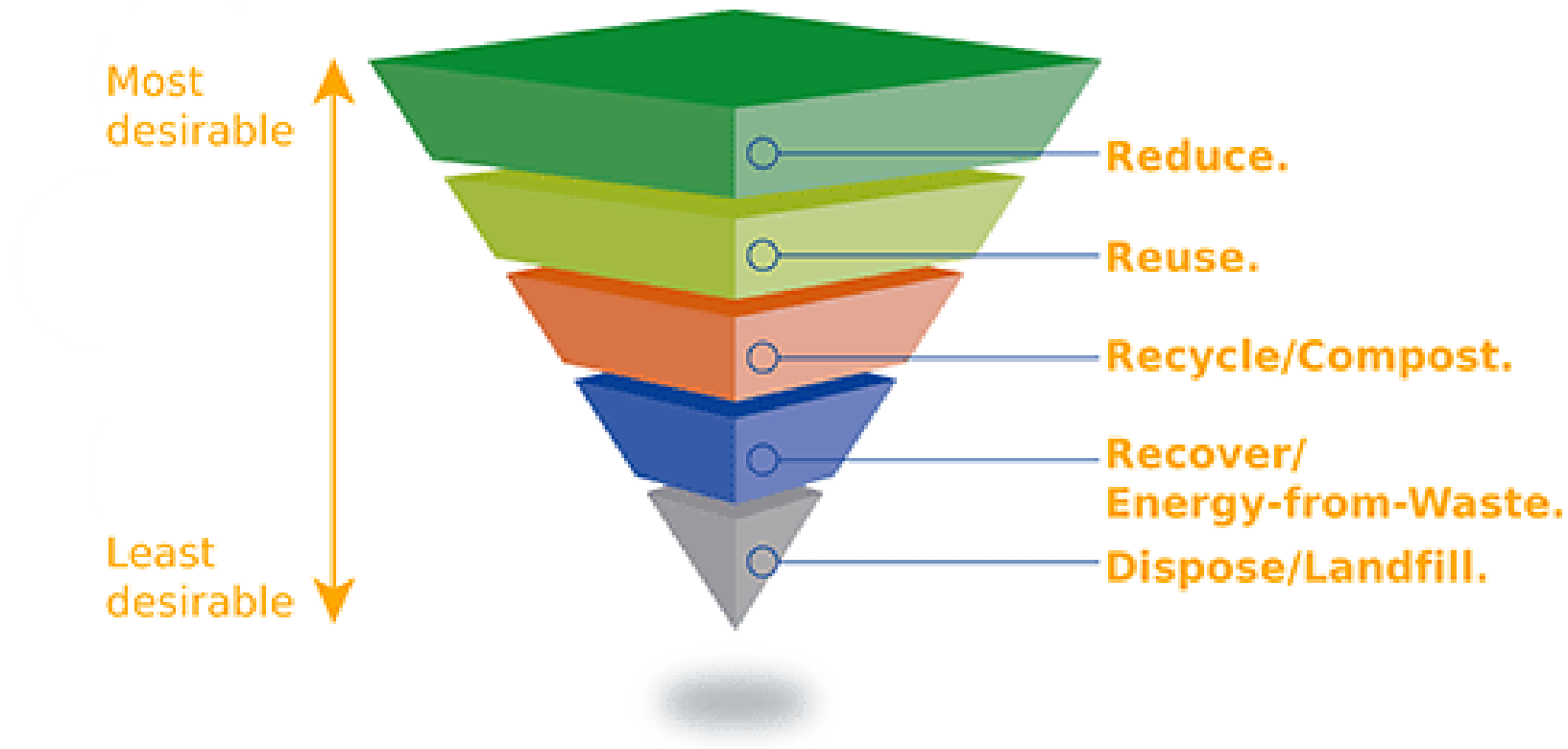
Energy-from-Waste



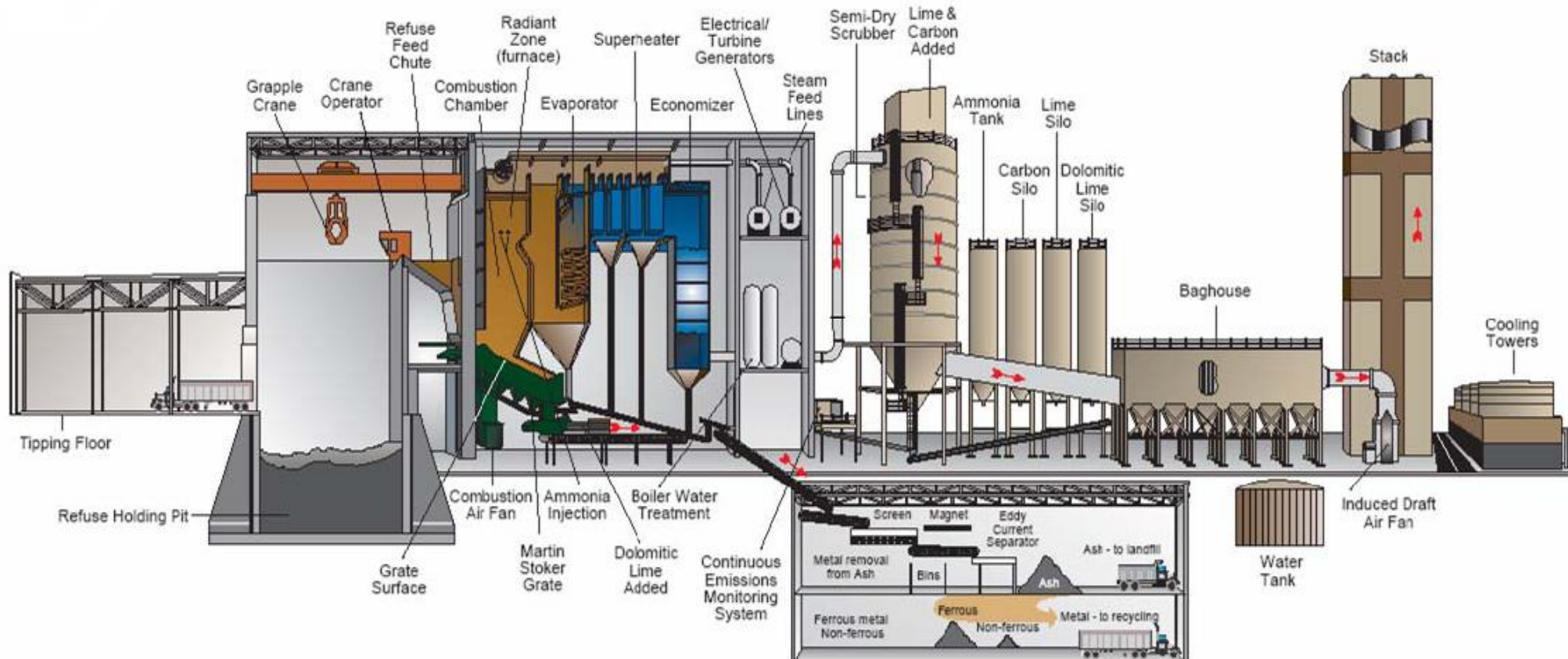
Creating Value and Sustainable Material
Management Solutions

Energy-from-Waste

- An Essential Part of Sustainable Materials Management



Energy-from-Waste is Beneficial



Refuse volume is reduced 10:1

Refuse weight is reduced 4:1



Energy From Waste Services Overview



A diversified waste portfolio with beneficial ash



Secure destruction with environmental sustainability

Drum waste can be pit-fed via our shredder



The Role of EfW in Corporate Sustainability

- A number of businesses rely on energy-from-waste facilities to attain sustainability goals focused on Zero Waste to Landfill and/or Landfill Free Status

P&G*



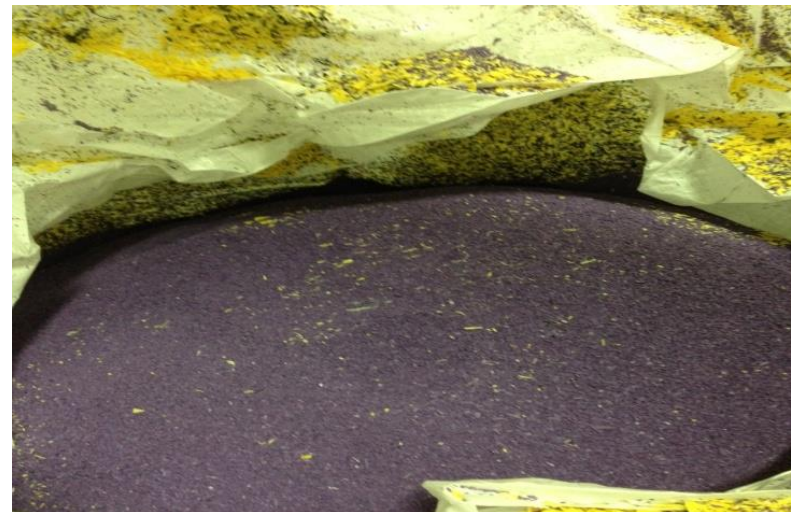
Profiled Waste Types Accepted

- Non-manufacturing Waste
- Manufacturing By-Products/waste
- Pharmaceutical and Beauty Care waste
- Electronic Waste
- Food Production Waste

- Commodity Waste
- Remediation Waste
- Liquid Waste
- Consumer Goods
- Medical Waste



Transforming Waste Into a Beneficial Energy Resource



Non – Hazardous Waste Processed for Beneficial Reuse



Ref: environmental show of the South

Processing - Blending Industrial Waste for Energy Recovery



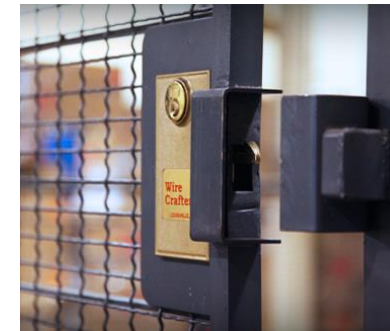
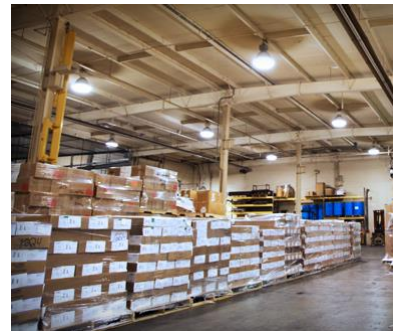
EfW Liquid Direct Injection

- **Liquid Direct Injection (LDI) technology is designed to evaporate water and destroy contaminants typically found in non-hazardous industrial liquid waste streams, including FIFRA waste water.**
- **Liquid directly injected into the advanced combustion systems where water is instantly vaporized and the remaining contaminants are destroyed**
- **Some of the waste water is beneficially reused by the EfW facility to offset need for potable water**



Assured Destruction Services

- **DEA Controlled Substances**
- **Pharmaceuticals**
- **Personal Care Products**
- **Confidential Documents**
- **Consumer Commodities**
- **Packaged Food Recalls**
- **Proprietary Equipment, Materials, Packaging**



EfW Metal Recovery

Extracting higher Quality metal value from Ash

- Mixed non-ferrous
- Ferrous metal
- Coins
- Jewelry
- Stainless



For each ton of MSW processed, the EfW facility recovers 50 lbs of metal for commercial recycling

EfW – Reducing GHG Emissions

- The United States generates nearly 390 million tons of trash per year, or about 7 pounds per person per day
- According to the EPA
 - For every tons of garbage processed at an energy-from-waste facility approximately one (1) ton of emitted carbon-dioxide equivalent in the atmosphere is prevented
- With 80+ EfW facilities recovering energy from 30 million tons of trash more than 30 million tons of CO₂e are avoided

Environmentally & Economically Friendly Steam Service



EfW – Sustainable Solution Summary

- **Energy-from-Waste Facilities can;**
 - Reduce reliance on landfills
 - Produce renewable, base load energy
 - Reduce greenhouse gas emissions
 - Recover metals for recycling
 - Enhance and complement recycling
 - Operate with excellent safety and environmental performance
 - Create economic benefits, including good-paying, green jobs
 - Provide a sustainable solution for materials that are difficult to reduce, reuse and recycle



Our mission to ensure no waste is ever wasted.

Thank you

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